

# CEPS COMMENTARY

*Thinking ahead for Europe*

## Is Europe vulnerable to Russian gas cuts?

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Increasing tensions between Ukraine and Russia inevitably evoke memories in the European Union of the gas supply disruptions in January 2009. Back then, the gas dispute between Russia and Ukraine led to a severe drop in Russian gas supplies in the midst of a winter freeze, resulting in major disruptions of both domestic heating and industrial production, particularly in some eastern EU member states. The question today is whether Europe in 2014 is as vulnerable to potential (forced or voluntary) cuts in Russian gas supplies as it was five years ago. Two scenarios are considered here. First, could Europe sustain longer cuts in gas supplies from Russia, either voluntarily as part of EU sanctions or forced as a Russian retaliation against EU sanctions? And second, what impact would disruptions of Russian gas deliveries to Ukraine have on the EU, which might arise for political reasons and in the worst case due to war. Essentially we argue that Russia is highly dependent on gas exports to Europe, while Europe – at least in the medium-term – can resort to alternatives to Russian gas. In addition, Europe is much better prepared for potential short-term supply disruptions than it was five years ago.

### Replacing Russian gas: A political lever for the EU

Regarding the exposure of the EU economy to Russian gas, about a quarter of the current EU energy mix is based on natural gas, mostly used in electricity production, domestic heating and feedstock/raw material in industrial production. Of the totality of natural gas burnt in the EU, nearly 23% is produced on Russian gas fields. This means that less than 6% the EU energy mix currently is dependent on Russian gas. In addition, the share of Russian gas in total EU gas imports (including LNG) has decreased slightly from 39% in 2009 to 36% in 2012, despite growing total import dependence. The resulting market loss of Russian gas is comparable to the annual gas consumption of the Czech Republic.

While import dependence in the EU remains high, Russia may be more dependent on export revenues from its gas than the EU is on gas imports from Russia. Some 53% of Russian gas exports go to the EU worth an estimated \$24 billion (€17 billion). Gazprom and the Russian state budget are thus highly dependent on exports to the EU and further supply disruption could lead to increasing efforts by EU member states to replace Russian gas with other

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alternatives. While it would certainly be difficult for the EU to completely replace Russian gas in the short-term, it could at least partly replace gas from Russia with Algerian, Qatari or Nigerian LNG (re)diverted to EU terminals (albeit with a significant price tag<sup>1</sup>), as well as with piped gas from Norway, which still has capacities to increase exports to the EU. Furthermore, coal and (domestic) lignite could substitute gas in electricity generation at least in the short-term. In the longer run, there is scope for increased LNG reception capacity that could be built, having in mind that the US is currently contemplating investment in LNG export facilities. If Russia were further to escalate geo-political tensions over Ukraine, the prospect of the EU and US making a concerted response of this kind would become an obvious matter for consideration, even if such investments would be very costly and take many years to implement. From the Russia standpoint, however, if the Kremlin actually provoked such investments, it would gravely undermine their economy's primary asset.

Russia, on the other hand, cannot easily diversify its export routes away from the EU. Contrary to oil, gas is not a global commodity and is mainly shipped by pipelines. The bulk of Russia's export capacities for gas is targeted at the EU market. As major supply routes to Asia are non-existent, a redirection of Russian gas exports to other markets in the short to medium term is impossible. This may give the EU an economic lever over Russia which could be used should relations with Russia deteriorate further.

## EU is better prepared to deal with interruptions to Ukraine gas transit

Similar to 2009, potential disruptions could occur again if Russia were to interrupt deliveries to Ukraine for political reasons and/or because of Ukraine's debts with Gazprom, which reportedly have reached almost \$2 billion (€1.4 billion). In addition, interruptions of deliveries to the EU could occur in the worst case, if war breaks out over the Crimean peninsula. Although the Ukrainian gas transmission system remains the main route for Russian gas flowing into the EU, even if Russian supplies transiting this gas corridor were to be stopped completely, *the 2009 scenario is unlikely to be reproduced*.

For one, Europe is coming out of a comparatively mild winter where lower heating demand has left gas storage levels around Europe at just below 50%. While storage capacity is unequally distributed across EU member states, this renders the EU less vulnerable to supply shocks in the short term, in particular as Europe enters the warmer seasons characterised by lower gas demand.

Furthermore, in the face of changing global gas markets and partly also as a response to past supply disruptions, the EU internal gas market has further integrated since 2009 and is now better equipped to face external shocks. In particular, additional gas interconnectors, reverse flow capacities<sup>2</sup>, storage sites<sup>3</sup> and LNG facilities<sup>4</sup> have already and will further enhance the security of EU gas supplies. Yet, some regions remain more vulnerable than others, in particular the Baltic member states, which are entirely dependent on imports from Russia

<sup>1</sup> In 2012, prices of LNG sold on the Japanese market were of roughly \$16.75/Btu, whereas at the German border, the average price of imported gas was of \$11.03/Btu (BP, 2013).

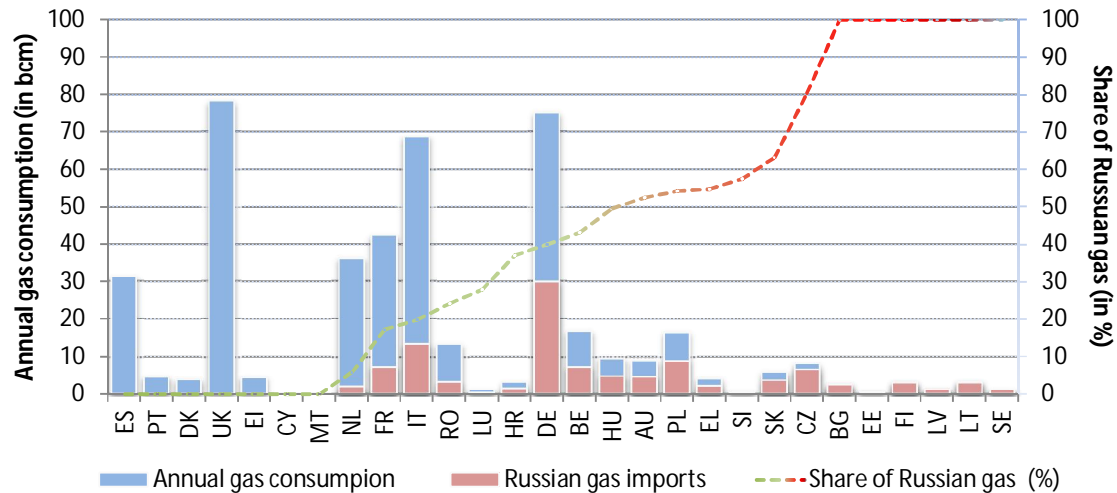
<sup>2</sup> According to the EU Regulation on Gas Supply Security (No 994/2010), all gas interconnectors between the member states should be equipped with reverse flow capabilities by the end of 2014 (European Parliament, 2010).

<sup>3</sup> Between January 2010 and January 2013, 12 storage facilities of a total maximum working volume of 13,060 m<sup>3</sup> have been deployed throughout the EU (Eurogas, 2010 and 2013).

<sup>4</sup> Between January 2009 and July 2013, six LNG terminals of a total capacity of 55 bcm have been deployed throughout the EU (GIE, 2013). A number of other facilities are currently under construction such as the LNG terminals in Swinoujscie (Poland, up to 5 bcm/year) or Klaipeda (Lithuania, up to 4 bcm/year).

and not connected to the EU pipeline network. However, the gas markets of these regions/member states are relatively small (see Figure 1). If put together, the total consumption of Bulgaria, Sweden, Finland, Lithuania, Latvia and Estonia amounts to 12.2 bcm, i.e. roughly 16% of the German demand.

Figure 1. Russian gas in the total gas consumption of the EU-28 (aggregated 2012 data)



Sources: BP (2013), EIA (2013 and 2014).

What may be more important, however, is the declining importance of Ukraine as a transit country for Russian gas exports over the past decade. While in 2009 some 80% of Russian exports to the EU passed through Ukraine, this share has decreased to less than 50% by today. One of the key reasons for this is the addition of 55 bcm of direct transport capacity between Russia and Germany provided by the Nord Stream pipeline, which became fully operational in 2012. This means that less than 12% of total EU gas consumption today remains dependent on Ukraine transit routes. Short-term partial disruptions of transit activities are thus likely to be of an order of magnitude that can be compensated by other supply routes or suppliers. In this respect, it should also be noted that both Nord Stream and the Yamal pipelines, with a combined maximum capacity of 88 bcm, currently have substantial unused spare capacity.

In any case, with transit infrastructure remaining intact, a disruption of gas supplies imported through Ukraine is likely to be of a temporary nature, given the size of the Ukrainian gas market, the high gas prices that Gazprom charges Naftogas and the resulting large revenues from gas exports to Ukraine. With Ukraine being the second largest export market for Russian gas, similar to the size of Germany (around 30 bcm per year), supply disruptions would have severe financial consequences for Gazprom. Worse than that, Russia's credibility as a reliable gas supplier is (further – after 2009) at stake if any such measures should lead to a reduction of deliveries to the EU.

At the present time it is impossible to know how far Russia intends to go over Ukraine, over both Crimea and Eastern mainland Ukraine. In any case, however, even in the worst hypotheses, it is evident that gas has been losing its edge as a geo-political weapon for Russia.

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